

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #1 - Habitat Monitoring and Management, Very-Low Intensity and Complexity****Scenario Description:**

This scenario is applied to all landuse types where the native plant condition (i.e. T&E plant species) or wildlife habitat is the resource concern, and where very-low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 16 hours of labor per year.

**Before Situation:**

Rare or declining habitat is deficient and annual monitoring and adaptive management actions of very-low intensity and complexity will improve conditions.

**After Situation:**

Rare and declining habitat is improved by implementation of annual adaptive management actions of very-low intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 640

**Scenario Cost:** \$596.59

**Scenario Cost/Unit:** \$0.93

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	2	\$11.78
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	3	\$104.43
<b>Labor</b>						
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	3	\$257.22
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	10	\$177.20

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #2 - Habitat Monitoring and Management, Low Intensity and Complexity****Scenario Description:**

This scenario is applied to all landuse types including those with wildlife as a modifier, where native plant conditions (T&E plants) or wildlife have been identified as the resource concern, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year.

**Before Situation:**

Rare or declining habitat is deficient due to the absence of annual monitoring and adaptive management actions of low intensity and complexity.

**After Situation:**

Rare and declining habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Scenario Cost:** \$485.33

**Scenario Cost/Unit:** \$3.03

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	1.5	\$52.22
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	1	\$5.89
<b>Labor</b>						
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	3	\$257.22
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	7	\$124.04

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #3 - Rare or Declining Habitat Monitoring and Management, Medium Intensity and Complexity****Scenario Description:**

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified related to rare or declining habitats, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that impede monitoring efforts, replacing damaged fence markers, or other minor adaptive management activities). The adaptive mgmt requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt effort. Mowing of roads and trail is required to provide access for monitoring and management.

**Before Situation:**

Rare or declining habitat is deficient due to the absence of annual monitoring and adaptive management actions of medium intensity and complexity.

**After Situation:**

Rare or declining habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Scenario Cost:** \$1,826.88

**Scenario Cost/Unit:** \$11.42

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	4	\$23.56
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$47.56	5	\$237.80
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	6	\$208.86
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	5	\$98.90
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	10	\$857.40
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	20	\$354.40

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #4 - Habitat Monitoring and Management, High Intensity and Complexity****Scenario Description:**

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort.

**Before Situation:**

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of high intensity and complexity.

**After Situation:**

Wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.

**Scenario Feature Measure: Monitoring efforts and adaptive management actions****Scenario Unit: Acre****Scenario Typical Size: 80****Scenario Cost: \$1,715.76****Scenario Cost/Unit: \$21.45****Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	8	\$47.12
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	6	\$208.86
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$47.56	3	\$142.68
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	20	\$354.40
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	3	\$59.34
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	10	\$857.40

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #5 - Development of Shallow Micro-Topographic Features with Normal Farming Equipment.****Scenario Description:**

This typical scenario is installed on open non-wetlands. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario is typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.

**Before Situation:**

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available for invertebrate use.

**After Situation:**

Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** hours of tractor use

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Scenario Cost:** \$719.66

**Scenario Cost/Unit:** \$35.98

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	20	\$294.20
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	6	\$306.78
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	6	\$118.68

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #6 - Development of Deep Micro-Topographic Features with Heavy Equipment.****Scenario Description:**

This typical scenario is installed on open non-wetlands, where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario is typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).

**Before Situation:**

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available aquatic dependent invertebrates. Vertebrate wildlife habitat is lacking diversity.

**After Situation:**

Deep (6" - 12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the deep micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** Hours**Scenario Unit:** Acre**Scenario Typical Size:** 20**Scenario Cost:** \$1,978.01**Scenario Cost/Unit:** \$98.90**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$174.58	6	\$1,047.48
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	20	\$294.20
<b>Labor</b>						
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$22.40	8	\$179.20
<b>Mobilization</b>						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$457.13	1	\$457.13

**Practice: 643 - Restoration and Management of Rare and Declining Habitats****Scenario: #7 - Topographic Feature Creation, Medium Complexity and Intensity****Scenario Description:**

Setting is any land use with the potential to provide habitat for species of plants and animals identified as Rare and Declining and the habitat potential is not currently being captured. This scenario is typically occurs on lands used for the production of forest products, grazing and/or fish and wildlife where the slope gradient is less than two percent and predominant soils are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for species of plants and animals identified as rare and declining is the absence of sufficient variability in microtopographic relief in the area. The construction of medium intensity and medium complexity topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for rare and declining species. The construction of micro and macro topographic features can be implemented with the use of equipment in the 70-150 HP range due to current site conditions and implementation techniques. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)).

**Before Situation:**

The site lacks sufficient micro- and macrotopographic features needed for optimal habitat for target rare and declining species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:**

Appropriate equipment (i.e. – Skidsteer, Farm Tractor, Small Dozer, etc) was used to construct planned topographic features essential for identified species. As a result of the installation, adequate habitat needs have been provided.

**Scenario Feature Measure:** number and size of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 50

**Scenario Cost:** \$36,262.63

**Scenario Cost/Unit:** \$725.25

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	50	\$8.00
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.98	15	\$29.70
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$3.68	15	\$55.20
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.83	15	\$72.45
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$52.44	32	\$1,678.08
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$116.41	64	\$7,450.24
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$62.93	64	\$4,027.52
Hydraulic Excavator, 1 CY	931	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$106.80	32	\$3,417.60
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$40.41	64	\$2,586.24
Track Loader, 95HP	935	Equipment and power unit costs. Labor not included.	Hour	\$82.91	64	\$5,306.24
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	64	\$3,272.32

**Labor**

**Labor**

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	256	\$5,063.68
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$32.10	32	\$1,027.20
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	128	\$2,268.16